

What is claimed is:

1. A method for locating an identified mobile station at an unknown location, wherein said identified mobile station is one of a plurality of mobile stations, and wireless signal
5 measurements are capable of being obtained from wireless transmissions between the plurality mobile stations and a network of base stations, the improvement characterized by:

determining a plurality of estimators for estimating locations of said mobile stations when said estimator is supplied with said wireless signal measurements obtained from wireless transmissions between said mobile station and said network of base stations;

10 storing a plurality of data item collections, wherein for each of a plurality of geographical locations, there is one of said data item collections having:

(a1) a representation of the geographical location, and

(a2) a representation of said wireless signal measurements between one of the mobile stations and the base stations when said one mobile station is
15 approximately at the geographical location of (a1);

for each of said estimators perform (b1) and (b2):

(b1) inputting to the mobile station location estimator each of a plurality of said data item collections for generating a corresponding location estimate;

(b2) comparing, for each of said data item collections, said representation (a1) with
20 said corresponding location estimate for determining one or more corresponding performance measurements of the estimator;

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activating a first and a second of said estimators with said wireless signal measurements for estimating, respectively, a first and a second location of said identified mobile station;

5 determining, for said first location, a first of said performance measurements for the first estimator;

determining, for said second location, a second of said performance measurements for the second estimator;

10 obtaining a resulting location estimate for the identified mobile station using each of said first and second locations, and said first and second performance measurements.

2. A method for determining from a plurality of conditions a particular unknown condition, wherein for substantially every one of said conditions there is a corresponding set of measurements for identifying the condition, comprising: classifying or

15 partitioning said plurality of conditions into a collection of classes, wherein for each said class, and each of said conditions therein, said corresponding set of measurements for identifying the condition is related to said corresponding set of measurements for identifying another one of said conditions in said class;

determining a plurality of estimators for estimating said conditions when supplied with said corresponding set of measurements;

20 storing a plurality of data item collections, wherein for each of a plurality of said conditions, there is one of said data item collections having:

(a1) a representation of the condition, and

(a2) a representation of a set of measurements for identifying said condition of
(a1);

for each of said estimators, and each of class of a plurality of said classes, perform (b1) and
(b2):

5 (b1) inputting said representation of (a2) of each of a plurality of said data item
collections to the estimator for generating a corresponding estimated condition, wherein
said representation (a2) is contained in the class;

(b2) comparing, for each of said data item collections, said representation (a1) with
said corresponding estimate for determining a corresponding performance measurement of
10 the estimator for the class, wherein ;

activating a first and a second of said estimators with a particular set of
measurements for estimating, respectively, a first and a second estimate of said particular
unknown condition;

finding a particular one of said classes containing said particular set of
15 measurements;

determining, for said first estimate, a first of said performance measurements for
the first estimator using an identification of said particular class ;

determining, for said second estimate, a second of said performance measurements
for the second estimator using an identification of said particular class;

20 obtaining a resulting estimate for the unknown condition using each of said first
and second locations, and said first and second performance measurements.

3. A method as claimed in Claim 2, wherein

(a) each said condition includes a geographical area;

(b) each said set of measurements includes wireless signal measurements between a mobile station and a network of base stations.

4. ~~A method~~ A method for determining from a plurality of conditions a particular unknown condition, wherein for substantially every one of said conditions there is a corresponding set of measurements for identifying the condition, comprising: classifying or

5 partitioning said plurality of conditions into a collection of classes, wherein for each said class, and each of said conditions therein, said corresponding set of measurements for identifying the condition is related to said corresponding set of measurements for identifying another one of said conditions in said class;

10 determining a plurality of estimators for estimating said conditions when supplied with said corresponding set of measurements;

storing a plurality of data item collections, wherein for each of said estimators and each of a plurality of said conditions, there is one of said data item collections having:

(a1) a representation of the condition, and

15 (a2) a representation of a set of measurements for identifying said condition of (a1);

(a3) an estimate of said condition generated by said estimator when said representation of (a2) is input to said estimator;

20 activating a first of said estimators with a particular set of measurements for determining a first estimate of said particular unknown condition;

retrieving one or more of said data items wherein for each of said retrieved data items, said estimate (a3) has a desired relationship to said first estimate, and said estimate (a3) was generated by said first estimator;

determining a second estimate of said particular unknown condition using said representations of (a) from said retrieved data items.

5. A method as claimed in Claim 2, wherein

(a) each said condition includes a geographical area;

5 (b) each said set of measurements includes wireless signal measurements between a mobile station and a network of base stations.